CYBERSECURITY, BACHELOR OF SCIENCE

The rise in cyber threats has created an unprecedented demand for cybersecurity specialists. Data breaches, malware infections, and software vulnerabilities are common in today's technology and it is critical to fully understand how these attacks occur, how to prevent them, and how to recover. A cybersecurity major will understand techniques used as well as the best methods to protect data. The cybersecurity degree includes courses in programming, wireless technologies, mathematics, and networking concentrating on theory and hands-on experience.

Curriculum

The matrix below is a sample plan for all coursework required for this program.

Course	Title	Hours
Freshman		
Fall		
ENGL 1013	Composition I [1]	3
FAH 1XXX	Fine Arts and Humanities Courses [1]	3
MATH 2243	Calculus for Business and Economics [2]	3
TECH 1001	Orientation to the University [3]	1
CSEC 1003	Introduction to Cybersecurity	3
CSEC 1113	Introduction to Networking	3
	Hours	**16**
Spring		
ENGL 1023	Composition II [1]	3
SCIL 1XXX	Science with Laboratory [1]	4
COMS 1011 & COMS 1013	Programming Foundations I Lab and Programming Foundations I	4
CSEC 1213	Wireless and Cellular Security	3
	Hours	**14**
Sophomore		
Fall		
COMS 2223	Computer Organization and Programming	3
COMS 2203	Programming Foundations II	3
MATH 2703	Discrete Mathematics	3
CSEC 2213	Network Forensics and Incident Response	3
SS 1XXX	Social Science Courses [1]	3
	Hours	**15**
Spring		
COMS 2323	Programming in Python	3
COMM 2173	Business and Professional Speaking [4]	3
COMS 2213	Data Structures	3
CSEC 2223	Virtualization	3
Elective		3
	Hours	**15**
Junior		
Fall		
SCIL 1XXX	Science with Laboratory [1]	4
CSEC 3243	Computer Architecture	3
STAT 2163	Introduction to Statistical Methods	3
CSEC 4133	Large Scale Distributed Systems	3
CSEC 3123	Cyber Defense I	3
	Hours	**16**
Spring		
FAH 1XXX	Fine Arts and Humanities Courses [1]	3
COMS 3233	Database Design and Implementation	3
CSEC 3223	Programming Embedded Systems	3
CSEC 3233	Cyber Defense II	3
COMS 3703	Advanced Operating Systems	3
	Hours	**15**
Senior		
Fall		
SS 1XXX	Social Science Courses [1]	3
CSEC 4123	Applied Cryptography	3
CSEC 4143	Building Secure Software	3
CSEC 4153	Human Factors in Cybersecurity	3
CSEC 4233	Legal Issues in Cybersecurity	3
	Hours	**15**
Spring		
CSEC 4213	Information Systems Risk Management	3
CSEC 4243	Software Security Analysis and Reverse Engineering	3
CSEC 4293	Cybersecurity Capstone Project	3
USHG 1XXX	U.S. History and Government [1]	3
Elective		2
	Hours	**14**
	Total Hours	**120**

[1] See appropriate alternatives or substitutions in "General Education Requirements (https://catalog.atu.edu/undergraduate/general-education-requirements/)."

[2] MATH 2914 Calculus I is a substitution for MATH 2243 Calculus for Business and Economics.

[3] TECH 1013 Introduction to the University is a substitution for TECH 1001 Orientation to the University; Electives would reduce from 3 hours to 1 hour.

[4] COMM 2003 Public Speaking is a substitution for COMM 2173 Business and Professional Speaking.